PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. 00-1123-A)

In the Application of:	)	
	)	
Cunningham, et al.	)	
	)	
Serial No.: 09/929,957	)	Examiner: TBA
	)	
Filed: August 15, 2001	)	Art Unit: 1743
	)	
For: A Label-Free High-Throughput Optical Technique for Detecting Biomolecular Interactions	)	

TRANSMITTAL LETTER

Asst. Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

In regard to the above identified application,

1. We are transmitting herewith the attached:
   a) Information Disclosure Statement;
   b) PTO Form 1449 and 57 cited references;
   c) Return postcard

2. With respect to fees:

   No fee is due at this time.

3. GENERAL AUTHORIZATION: Please charge any additional fees or credit overpayment to Deposit Account No. 13-2490. A duplicate copy of this sheet is enclosed.

4. CERTIFICATE OF MAILING UNDER 37 CFR § 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described in paragraph 1, are being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Asst. Commissioner for Patents, Washington, D.C. 20231 on November 20, 2001.

Respectfully submitted,

Date: November 20, 2001

Lisa M.W. Hillman
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UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. **00-1123-A**)

PATENT

In the Application of:

Cunningham, et al.

Serial No.: **09/929,957**

Filed: **August 15, 2001**

For: **A Label-Free High-Throughput Optical Technique for Detecting Biomolecular Interactions**

Art Unit: 1743

Examiner: To be assigned

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Pursuant to the duty of disclosure provided by 35 C.F.R. § 1.56 and §§ 1.97-98, the applicants wish to make the following references of record in the above-identified application. Copies of the references are enclosed. Copies are also listed in the PTO-1449 form enclosed herewith. It is requested that the documents be given careful consideration and that they be cited of record in the prosecution history of the present application so that they will appear on the face of the patent issuing from the present application.

In the judgment of the undersigned, portions of the references may be material to the examination of the pending claims, however no such admission is intended. 37 C.F.R. 1.97 (h). The references have not been reviewed in sufficient detail to make any

other representation and, in particular, no representation is indented as to the relative importance of any portion of the references. This Statement is not a representation that the cited references have effective dates early enough to be "prior art" within the meaning of 35 U.S.C. sections 102 or 103.

CITED REFERENCES

U.S. Patent Documents

Document Number	Date	Name	Class	Filing Date If appropriate
4,931,384	6/5/90	Layton, et al.	435	10/17/84
5,118,608	6/2/92	Layton, et al.	435	9/22/89
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5,496,701	3/5/96	Pollard-Knight	435	6/2/92
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5,738,825	4/14/98	Rudigier, et al.	422	7/18/94
5,804,453	9/8/98	Chen	436	2/9/96
5,846,843	12/8/98	Simon	436	11/18/96
5,925,878	7/20/99	Challener	250	8/20/97
5,955,378	9/21/99	Challener	436	8/20/97
5,986,762	11/16/99	Challener	356	6/15/98
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6,146,593	11/14/00	Pinkel, et al.	422	7/24/97

European Patent Documents

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0 112 721	7/4/87	EPO
8 402 578	7/5/84	PCT
9 008 318	7/2690	PCT
2 227 089	7/18/90	GB
0 517 777	12/16/92	EPO
9 113 339	9/5/91	PCT
9 221 768	12/10/92	PCT
9 314 392	7/22/93	PCT
0 660 924	7/5/95	EPO
9 503 538	2/2/95	PCT

9 857 200	12/17/98	PCT
9 909 392	2/25/99	PCT
9 909 396	2/25/99	PCT
9 966 330	12/23/99	PCT
0 023 793	4/27/00	PCT
0 104 697	1/18/01	PCT

Other Documents

1) Cowan, *"The Recording and Large Scale Replication of Crossed Holographic Grating Arrays using Multiple Beam Interferometry"*, SPIE Vol. 503, *Application, Theory, and Fabrication of Periodic Structures*, pp. 120-129 (1984)

2) Cowan, *"Holographic honeycomb microlens"*, Vol. 24, No. 5, *Optical Engineering*, pp. 796-802 (1985)

3) Cowan, et al., *"The Recording and Replication of Holographic Micropatterns for the Ordering of Photographic Emulsion Grains in Film Systems"*, Vol. 31, No. 3, *J. Imaging Sci.*, pp. 100-107 (1987)

4) Wang, et al., *"Guided-mode Resonances in Planar Dielectric-Layer Diffraction Gratings"*, Vol. 7, No. 8, *J. Opt. Soc. Am.*, pp. 1470-1474 (1990)

5) Cowan, *"Aztec Surface-Relief Volume Diffractive Structure"*, Vol. 7, No. 8, *J. Opt. Soc. Am.*, pp. 1529-1544 (1990)

6) Patel, et al., *"Multiwavelength Tunable Liquid-Crystal Etalon Filter"*, Vol. 3, No. 7, *IEEE Photonics Technology Letters*, pp. 643-644 (1991)

7) Patel, et al., *"Electrically Tunable and Polarization Insensitive Fabry-Perot Étalon with a Liquid-Crystal Film"*, Vol. 58, No. 22, *American Institute of Physics*, pp. 2491-2493 (1991)

8) Magnusson, et al., *"New Principle for Optical Filters"*, Vol. 61, No. 9, *Appl. Phys. Lett.*, pp. 1022-1024 (1992)

9) Huber, et al., *"Direct Optical Immunosensing (Sensitivity and Selectivity)"*, *Sensors and Actuators B*, 6, pp. 122-126 (1992)

10) Wang, et al., *"Theory and Applications of Guided-Mode Resonance Filters"*, Vol. 32, No. 14, *Applied Optics*, pp. 2606-2613 (1993)

11) Wang, et al., *"Design of Waveguide-Grating Filters with Symmetrical Line Shapes and Low Sidebands"*, Vol. 19, No. 12, *Optical Society of America*, pp. 919-921 (1994)

12) Jin, et al., *"A Biosensor Concept Based on Imaging Ellipsometry for Visualization of Biomolecular Interactions"*, 232, *Analytical Biochemistry*, pp. 69-72 (1995)

13) Brecht, et al., *"Optical Probes and Transducers"*, Vol. 10, *Biosensors & Bioelectronics,* pp. 923-936 (1995)

14) Magnusson, et al., *"Transmission Bandpass Guided-Mode Resonance Filters"*, Vol. 34, No. 35, *Applied Optics*, pp. 8106-8109 (1995)

15) Peng, et al., *"Experimental Demonstration of Resonant Anomalies in Diffraction from Two-Dimensional Gratings"*, Vol. 21, No. 8, *Optics Letters*, pp. 549-551 (1996)

16) Sigal, et al., *"A Self-Assembled Monolayer for the Binding and Study of Histidine-Tagged Proteins by Surface Plasmon Resonance"*, Vol. 68, No. 3, *Analytical Chemistry*, pp. 490-497 (1996)

17) Peng, et al., *"Resonant Scattering from Two-Dimensional Gratings"*, Vol. 13, No. 5, *J. Opt. Soc. Am. A.,* pp. 993-1005 (1996)

18) Jordan, et al., *"Surface Plasmon Resonance Imaging Measurements of Electrostatic Biopolymer Adsorption onto Chemically Modified Gold Surfaces"*, Vol. 69, No. 7, *Analytical Chemistry*, pp. 1449-1456 (1997)

19) Raguin, et al., *"Structured Surfaces Mimic Coating Performance"*, *Laser Focus World,* pp. 113-117 (1997)

20) Lin, et al., *"A Porous Silicon-Based Optical Interferometric Biosensor"*, Vol. 278, *Science*, pp. 840-843 (1997)

21) Morhard, et al., *"Immobilization of Antibodies in Micropatterns Detection for Cell Detection by Optical Diffraction", Sensors and Actuators B 70,* pp. 232-242 (2000)

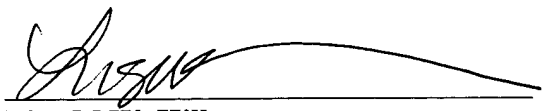
22) Jenison, et al., *"Interference-Based Detection of Nucleic Acid Targets on Optically Coated Silicon"*, Vol. 19, *Nature Biotechnology*, pp. 62-64 (2001)

23) Cunningham, et al., U.S. Provisional Patent Application, *"Resonant Reflection Microarray"*, Serial No. 60/244,312 filed October 30, 2000

24) Cunningham, et al., U.S. Provisional Patent Application, *"Resonant Reflection Microarray"*, Serial No. 60/283,314 filed April 12, 2001

25) Cunningham, et al., U.S. Provisional Patent Application, *"Resonant Reflection Microarray"*, Serial No. 60/303,028 filed July 3, 2001

Respectfully submitted,

Date: November 20, 2001 by: 

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FORM PTO-1449
(Rev. 2-32)

U.S. Department of Commerce
Patent and Trademark Office

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use several sheets if necessary)

Atty. Docket No.	Serial No.
00-1123-A	09/929,957

Applicant:	
Cunningham, et al.	
Filing Date:	**Group:**
August 15, 2001	1743

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	1	4,931,384	6/5/90	Layton, et al.	435	7	10/17/84
	2	5,118,608	6/2/92	Layton, et al.	435	7.1	9/22/89
	3	5,478,756	12/26/95	Gizeli, et al.	436	527	2/8/95
	4	5,496,701	3/5/96	Pollard-Knight	435	7.4	6/2/92
	5	5,598,267	1/28/97	Sambles, et al.	356	369	2/3/95
	6	5,690,894	11/25/97	Pinkel et al.	422	68.1	5/23/95
	7	5,738,825	4/14/98	Rudigier et al.	422	82.11	7/18/94
	8	5,804,453	9/8/98	Chen	436	518	2/9/96
	9	5,846,843	12/8/98	Simon	436	527	11/18/96
	10	5,925,878	7/20/99	Challener	250	225	8/20/97
	11	5,955,378	9/21/99	Challener	436	525	8/20/97
	12	5,986,762	11/16/99	Challener	356	375	6/15/98
	13	5,994,150	11/30/99	Challener, et al.	436	518	11/19/97
	14	6,035,089	3/7/00	Grann et al.	385	129	6/11/97
	15	6,100,991	8/8/00	Challener	356	445	6/22/99
	16	6,146,593	11/14/00	Pinkel, et al.	422	68.1	7/24/97

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FOREIGN PATENT DOCUMENTS

	Document Number							Date	Country	Class	Subclass	Translation	
												Yes	No
	17	0	1	1	2	7	1	4/87	EPO				
	18	8	4	0	2	5	7	8	7/5/84	PCT			
	19	9	0	0	8	3	1	8	7/26/90	PCT			
	20	2	2	2	7	0	8	9	7/18/90	GB			
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	22	9	1	1	3	3	3	9	9/5/91	PCT			
	23	9	2	2	1	7	6	8	12/10/92	PCT			
	24	9	3	1	4	3	9	2	7/22/93	PCT			
	25	0	6	6	0	9	2	4	7/5/95	EPO			
	26	9	5	0	3	5	3	8	2/2/95	PCT			
	27	9	8	5	7	2	0	0	12/17/98	PCT			
	28	9	9	0	9	3	9	2	2/25/99	PCT			
	29	9	9	0	9	3	9	6	2/25/99	PCT			
	30	9	9	6	6	3	3	0	12/23/99	PCT			
	31	0	0	2	3	7	9	3	4/27/00	PCT			
	32	0	1	0	4	6	9	7	1/18/01	PCT			

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		57	Cunningham, et al., U.S. Provisional Patent Application, *"Resonant Reflection Microarray"*, Serial No. 60/303,028 filed July 3, 2001

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication.

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